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## **Sensation seeking, social attitudes and humor appreciation in Italy**

Forabosco, Giovannantonio ; Ruch, Willibald

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# SENSATION SEEKING, SOCIAL ATTITUDES, AND HUMOR APPRECIATION IN ITALY

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**Summary**—The present study examines the role of sensation seeking, conservatism, toughmindedness, sex, and age in appreciation of humor in Italian adults. A sample of 100 females and 48 males responded to Italian adaptations of the 3 WD humor test (Ruch 1983), Form V of the sensation seeking scale (Zuckerman, 1979), and the C-Scale (Wilson & Patterson, 1970). Funniness of incongruity-resolution humor correlated positively with conservatism, female sex, and age, and negatively with all components of sensation seeking. Funniness of nonsense humor correlated positively with experience seeking, general sensation seeking, and male sex and negatively with conservatism. Funniness of sexual content in humor correlated positively with male sex, disinhibition, boredom susceptibility, and toughmindedness. Aversiveness of humor yielded less significant correlations. Conservatism, sensation seeking, and age were potent predictors of structure preference. The investigation of indices of appreciation of sexual content in humor confirmed that structure and content have to be separated both theoretically and empirically in appreciation of sexual humor. Finally, the attitudes held by individuals appreciating a particular type of humor were explored. The results allow the conclusion that appreciation of humor appreciation is embedded into a similar nomological network in Italy than in other countries studied.

## INTRODUCTION

Studies of humor and personality conducted in different countries suffer from the problem that their outcomes frequently can not be compared with each other. Humor tests based a cross-culturally stable taxonomy of humor are lacking. Such a test might serve as a common frame of reference for integrating findings and thereby providing the basis for accumulation of knowledge on the relationship between humor and personality.

So far, however, in most of the investigations the "humor test" used is an *ad hoc* measure of unknown psychometric properties. Most frequently a couple of jokes and cartoons were employed, which were selected by several "experts" as being representative for certain theoretically based--or even purely intuitive--humor categories. Neither an empirical tests of the homogeneity of these scales are applied nor an investigation of the validity or the comprehensiveness of the categories used are undertaken. Most frequently, the Freudian categories of harmless, sexual, and aggressive humor were used. Some of these humor measures were employed by one author only, or even worse, by one author in one study only.

In order to overcome this shortcoming of present humor research it was suggested to start a cross-cultural research project on humor taxonomy (Ruch, 1991). This program is based on a factor analytically derived taxonomy of humor appreciation initially developed with Austrian and German samples. Basically, the program involves a bidirectional process of transferring the taxonomy between countries back and forth and evaluating its applicability. Studies of the cross-cultural stability of this taxonomy so far involved Austria (Ruch, 1991), France (Ruch, Accoce, Ott & Bariaud, 1991), Turkey (Ciftci, 1990), and the USA (Deckers, McGhee & Ruch, 1993). Besides appraising the applicability of the taxonomy in other cultures and testing its comprehensiveness, this program also includes the investigation of the stability of the personality correlates across cultures. Thus, also the replicability of the nomological network in the respective culture serves as a criterion for the validity of the taxonomic model of humor appreciation.

Recently, the factor structure of the humor test was also replicated in Italy (Ruch & Forabosco, 1993). The present article constitutes a further step in validating the taxonomy by investigating whether the hypotheses regarding personality correlates of humor appreciation can be verified in Italy as well.

### A two-mode model of humor appreciation: The 3 WD taxonomy

The two-mode model of humor appreciation combines three basic factors of humor stimuli with two humor basic components of responses to humor. More specifically, an individuals humor profile is described by the degree of funniness and aversiveness of the humor categories of incongruity-resolution humor, nonsense humor, and sexual humor. Both the humor stimulus and responses factors are the result of a set of factor analyses of humor stimuli and response scales using various German and Austrian samples differing with regard to sex, age, occupation, health status and other variables (for the development of the model see Ruch, 1992).

Dimensions of humor appreciation. The funniness and aversiveness components in humor appreciation appeared to be almost orthogonal. Thus, a joke can be considered not funny, but be far from being aversive; or it can make one laugh although there are certain annoying aspects (e.g. one can enjoy the original or clever punch line but dislike the content of the joke). However, maximal appreciation of jokes and cartoons consists of high funniness and

low aversiveness, while minimal appreciation occurs if the joke is not considered funny but is found aversive.

Taxonomy of jokes and cartoons. The factor analyses aimed at developing a taxonomy of humor stimuli revealed that both structure and content of humor have to be considered in the classification of humor. More specifically, two dimensions emerged which are heterogeneous with respect to the jokes' content but homogeneous with respect to the structural properties of the jokes and cartoons.

The first structure-dominated humor category refers to jokes and cartoons which are characterized by punch lines in which the surprising incongruity can be completely resolved. The common element in this incongruity-resolution (INC-RES) type of humor is that the recipient first discovers an incongruity which is then fully resolvable upon consideration of information available elsewhere in the joke or cartoon. Although individuals might differ with respect to how they perceive and/or resolve the incongruity, they have the sense of having "gotten the point" or understood the joke once resolution information has been identified. There is general agreement about the existence of this two-stage structure in the process of perceiving and understanding humor (McGhee, Ruch & Hehl, 1990), however, typically the importance of structure was totally neglected when it came to the categorization of humor.

The other structure-dominated humor factor is nonsense humor, which also has a surprising or incongruous punch line, exactly as in incongruity-resolution humor. However, in the nonsense (NON) type of humor, the punch line may 1) provide no resolution at all, 2) provide a partial resolution (leaving an essential part of the incongruity unresolved), or 3) actually create new absurdities or incongruities. In nonsense humor the resolution information gives the appearance of making sense out of incongruities without actually doing so. While the recipient discovers that the incongruity is not totally senseless, there is no explicit "cognitive rule" (see Forabosco, 1992, for a discussion) present which resolves the incongruity. Nonsense humor should not be confused with the so-called "innocent" humor, because it refers to the typical structure of humor rather than to a harmless content. Both the incongruity-resolution and the nonsense structure can be basis for harmless as well as tendentious content (as in the case of sexual humor).

While the jokes and cartoons of the first two humor factors deal with a variety of topics (except sex) but are similar to each other with respect to the cognitive processes involved, the sexual (SEX) humor factor is characterized by the salient content. There is a variety of sexual themes involved and it is only the sex jokes and cartoons which load on this factor. It should be noted, that this factor refers to only the content of sex jokes and cartoons, and does not include their structural basis. Individual sex jokes and cartoons, however, do not consist of pure content but are embedded in a joke work. They may be based on the one structure or the other. Subsequently when it comes to humor categories (like in humor tests), sexual humor can be subdivided into three classes of "pure" sexual humor (in which the content largely overpowers the structure), incongruity-resolution-based sexual humor and nonsense-based sexual humor. The validity of the separation of the two structure based subgroups of sexual humor is supported by their different correlational profiles not only with the general structure categories but also with personality dimensions.

This model is assumed to provide an exhaustive taxonomy for the classification of both humor responses and humor stimuli at a general level. Accordingly, the humor test (3 WD; Ruch, 1983) developed for the assessment of humor appreciation provides a profile containing six scores: three for funniness of incongruity-resolution, nonsense and sexual humor (*i.e.*, INC-RES<sub>f</sub>, NON<sub>f</sub>, and SEX<sub>f</sub>) and three for their aversiveness (*i.e.*, INC-RES<sub>a</sub>, NON<sub>a</sub>, and SEX<sub>a</sub>).

### Personality correlates of humor appreciation

There is a close interlocking between appreciation of humor and personality. The relationship between humor appreciation, as measured by the 3 WD humor test, and personality variables was studied throughout the past decade. These studies were aimed at validating the ingredients in appreciation of humor as proposed by the two-mode model presented above. A recent review of these studies evaluated the different hypotheses regarding the existence and nature of two different humor structures, the significance of the humor content, and the validity of the separation of the funniness and aversiveness aspects in the appreciation of humor (Ruch, 1992).

The prediction of appreciation of the two structural factors is based on the following rationale. The interpretation of the factors suggests that the two structures mainly differ with respect to the degree of resolution obtained. In incongruity-resolution humor a complete resolution of the incongruity is possible while there are residual traces of incongruity in nonsense humor. Thus, while in the first category the resolution of incongruity contributes to appreciation, in factor two appreciation is based on the existence of residual incongruity.

This consideration and evidence from other sources led to the hypotheses that appreciation of the incongruity-resolution structure is a manifestation of a broader need of individuals for contact with structured, stable, unambiguous forms of stimulation, whereas appreciation of the nonsense structure in humor reflects a generalized need for uncertain, unpredictable, and ambiguous stimuli. Conservatism incorporates the aspect of avoidance of high stimulus uncertainty (in information theory sense, e.g. complexity, novelty, ambiguity, incongruity, unfamiliarity, unpredictability) and was therefore studied in the context of appreciation of INC-RES humor. Sensation seeking was expected to be a predictor of appreciation of nonsense since it incorporates the aspect of enjoying higher degrees of stimulation (rather than merely tolerating it) which seemed to be inherent in this type of humor. Appreciation of sexual content in humor was reliably associated with the second dimension in the attitude space, tough-- vs. tendermindedness. In the following the main conclusions regarding the personality correlates of humor are summarized. For details, the reader is referred to the review (Ruch, 1992) or to the original articles which are listed there.

Conservatism and toughmindedness. According to Wilson's (1973) dynamic theory of conservatism this trait reflects a generalized fear of both stimulus and response uncertainty. This should lead more conservative individuals to show greater avoidance and dislike of novel, complex, unfamiliar, incongruous events and to prefer and seek out stimuli which are simpler, more familiar and congruent. This model of conservatism received support by successfully predicting preference for structural properties involved in different forms of art, poetry, and music (e.g. Glasgow, Cartier & Wilson, 1985).

Accordingly, it was postulated that conservative persons find incongruity-resolution humor more funny and nonsense humor more aversive than liberals (Ruch, 1984). These predictions are based on the fact that a full resolution of incongruities is possible in incongruity-resolution humor, whereas a residue of uncertainty is always left in nonsense humor. The reduction of uncertainty should be more pleasurable for conservatives than for liberals and the remaining incongruity should be experienced more negatively by them. The review was based on 13 samples comprising 1600 subjects from four different nations involving different conservatism questionnaires. It shows that these hypotheses are well substantiated. These coefficients range from 0.17 to 0.48 with an average of 0.37 (Ruch, 1992).

Studies investigating the structure of social attitudes usually extract a bipolar factor of tough-tendermindedness in addition to conservatism-radicalism (Eysenck, 1954). Scales of sexual liberalism are usually located on the toughminded side of this axis (with a smaller loading on radicalism). The disinhibition component of sensation seeking also is a marker of

toughmindedness. It could be verified that all three scales, toughmindedness, sexual libido, and disinhibition are predictors of appreciation of the content of sexual humor. Thus, appreciation of content and structure of (at least) incongruity-resolution based humor can be represented in a two-dimensional attitude space (Ruch & Hehl, 1986). According to this model, conservatism is a predictor of funniness of incongruity-resolution based humor irrespective of the content, whereas toughmindedness is a predictor of appreciation of sexual content in humor, irrespective of the structural basis of the joke or cartoon.

Sensation Seeking. Zuckerman (1979) defines sensation seeking (SS) as "a trait defined by the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences" (p. 10). In particular Experience Seeking (ES) was expected to be related to appreciation of structural properties in humor, since there is evidence that ES is closely related to the novelty and complexity dimension of stimuli (Zuckerman, 1984). ES involves the seeking of stimulation through the mind and the senses, through art, travel, even psychedelic drugs, music and the wish to live in an unconventional style. ES turned out to be the subscale of sensation seeking most highly correlated with structural properties of different aesthetic objects such as art or music (e.g. Furnham & Bunyan, 1988; Glasgow *et al.*, 1985; Zuckerman, 1979).

Accordingly, as regards appreciation of humor structure it was hypothesized that ES (and boredom susceptibility, as well as total sensation seeking) correlates positively with  $NON_f$ , negatively with  $INC-RES_f$ , and negatively with  $NON_a$ . The review of 6 samples including 3 nations generally supported these hypotheses. While the coefficients were reliable, they were low. However, the degrees of freedom for a variable to correlate simultaneously positively with  $INC-RES_f$  and negatively with  $NON_f$  (which tend to be positively intercorrelated themselves) are rather low and the size of one coefficient restricts the size of the other. Based on the results of the review a modified hypothesis was put forward stating that sensation seeking (mainly ES and BS) determines the relative preference for nonsense humor over incongruity-resolution based humor rather than the absolute amount of enjoyment induced by these two categories (Ruch, 1992). For the examination of this hypothesis a Structure Preference Index (SPI; obtained by subtracting  $INC-RES_f$  from  $NON_f$ ) has to be generated. The SPI scores for funniness and aversiveness indeed correlated quite consistently with ES, BS, and the total scale in all samples studied (Ruch, 1992).

Sex and age. There are no sex differences in appreciation of the structure-dominated humor scales (Ruch & Hehl, 1985; Ruch, McGhee & Hehl, 1990). This is in line with the results found for conservatism and experience seeking (Zuckerman, 1979; Truett, 1993). There is, however, a tendency for males to give higher funniness and lower aversiveness ratings to sexual humor (Ruch & Hehl, 1985). Whereas this difference can be found consistently, the effect is small and the coefficients are not always significant. It can be assumed that this difference is due to the sexual content of the jokes and cartoons of this category rather than to its structural basis. This result is in agreement with the sex differences found for predictors of sexual humor, such as disinhibition, sexual libido, or toughmindedness (Eysenck, 1976; Ruch & Hehl, 1988; Zuckerman, 1979).

Little is known about age differences in appreciation of sexual content in humor. However, for the structural humor factors McGhee, Ruch and Hehl (1990) advanced a personality-based model of humor development during adulthood. Although the age developments cannot be described only by linear trends, generally, it is expected that  $INC-RES_f$  increases with increasing age, and  $NON_f$  and aversiveness of both structure-dominated humor categories decrease during the life span. These hypotheses were confirmed in a large scale study (Ruch *et al.*, 1990). They are in agreement with the age differences in conservatism and experience seeking (Truett, 1993; Zuckerman, 1979).

The aim of the present study is to investigate the relationship between personality and humor appreciation in the Italian culture. It will be studied whether the same correlational patterns emerge for conservatism, sensation seeking, toughmindedness, sex and age as they appeared in studies of German speaking studies. Moreover, the pattern of social attitudes associated with appreciation of humor will be explored. Finally, a more systematic evaluation of the hypotheses relating to structure preference, and to the sexual content in humor will be undertaken than in former studies.

## METHOD

### Subjects

The sample comprised 100 female and 48 male adults of the Ravenna area who volunteered and participated in this study. Their age was between 15 and 72 years with a mean of 34.52 years ( $SD = 13.66$ ). Subjects were very heterogeneous as regarded profession, education, and social condition.

### Material

The subjects answered Italian adaptations of the following scales and inventories.

C-Scale (Wilson & Patterson, 1970). This is a 50 item questionnaire in a trichotomous (yes, ?, no) answer format measuring the degree of conservatism. The items are presented in a "catchphrase"-format.

The C-Scale was translated by the senior author<sup>1</sup> and is currently adapted for Italian populations. Most of the items stem from the British and the Catalanian C-Scale (Ortet, Perez & Wilson, 1990). 6 Items were substituted to fit the Italian culture. The factor structure of the C-Scale in Italian samples, its psychometric properties and norm data will be reported separately (Forabosco & Ruch, 1993). Besides the total score of the C-Scale, the first two unrotated factors representing the dimension of conservatism-radicalism (R-factor) and tough vs. tendermindedness (T-factor) were used as well in the present study. They explain 14% and 7% of the variance, respectively.

Sensation Seeking Scale--Form V (Zuckerman, 1979). This is a 40 item questionnaire measuring the sensation seeking components of Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (Dis), and Boredom Susceptibility (BS). A total score of sensation seeking is provided as well.

The Italian version in a translation and adaptation by Tiberi (1983) was used. Item 9 (which regarded drug consumption) was substituted to make the scale applicable to the present sample. Factor analysis and the item total correlations computed for the data of the present sample suggested a few revisions. There were 1 item each deleted from the scales ES (Item 14) and BS (Item 2). Finally, one Item 9 was moved from ES to TAS.

The 3 WD ("Witz-Dimensionen") humor test--Forms A and B (Ruch, 1983). Each form of the 3 WD contains 35 jokes and cartoons which are rated for "funniness" and "aversiveness" on two seven-point scales. The first five items of each form are used for "warming up" and are not scored. Six scores can be derived: three for funniness of incongruity-resolution,

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<sup>1</sup>Glenn Wilson kindly checked the correspondence of the Italian version with the original English items.



nonsense, and sexual humor (*i.e.*, INC-RES<sub>f</sub>, NON<sub>f</sub>, and SEX<sub>f</sub>) and three for their aversiveness (*i.e.*, INC-RES<sub>a</sub>, NON<sub>a</sub>, and SEX<sub>a</sub>). In order to assure a high reliability both forms were combined in the analyses.

The 3 WD is currently adapted to the Italian culture (for details, see Ruch & Forabosco, 1993)<sup>2</sup> In the present study factor scores representing funniness and aversiveness of the three humor categories were used. The funniness data stem from a Varimax-rotated three-factor-solution. The aversiveness factor scores were computed by multiplying the rotated weights from the funniness analysis with the standardized aversiveness scores. This procedure assured that the nature of the factors is identical with the ones from the funniness analysis.

### Procedure

All subjects were tested individually. The instruments were presented as a package in the following order: SSS, 3 WD-A, C-Scale, and 3 WD-B. Subjects were instructed to complete the tests at home, alone, without any hurry and to return them in a few days. The reported testing time varied from 30 to about 50 minutes.

## RESULTS

Descriptive statistics (Means, standard deviation) as well as reliability estimates (Cronbach's alpha) were computed for the SSS-V and the C-Scale. The results are given in Table 1.

Table 1. Descriptive statistics for the SSS-V and the C-Scale

Variables	<u>M</u>	<u>SD</u>	<u>α<sup>1</sup></u>
Age	34.52	13.66	--
C-Scale	37.38	12.40	0.76
<u>Sensation seeking</u>			
TAS	5.35	2.99	0.80
ES	5.83	1.86	0.62
Dis	3.77	2.09	0.65
BS	3.73	1.77	0.44
Total	18.68	6.55	0.83

Note. <sup>1</sup> Cronbach's alpha.

Table 1 shows that Cronbach's alpha was sufficiently high for the C-Scale as well as for the TAS, ES, Dis, and the total scales of the SSS-V. The internal consistency of the BS scale, however, was rather low. This might be due to the restricted variance in the present sample.

### Intercorrelations among the predictors

<sup>2</sup>Copies of the Italian version of the 3 WD may be obtained by writing to G. Forabosco at the address given.

The intercorrelations among sex, age, sensation seeking, and conservatism are computed next. The results are given in Table 2.

Table 2. Intercorrelations among sex, age, sensation seeking, and conservatism

	Sex <sup>1</sup>	Age	TAS	ES	Dis	BS	SSS-Tot
Sex <sup>1</sup>	1.000						
Age	0.175*	1.000					
<u>Sensation Seeking</u>							
TAS	-0.191*	-0.311***	1.000				
ES	-0.087	-0.364***	0.479***	1.000			
Dis	-0.354***	-0.442***	0.374***	0.439***	1.000		
BS	-0.205*	-0.346***	0.212**	0.498***	0.560***	1.000	
SSS-TOT	-0.280***	-0.480***	0.769	0.776	0.765	0.686	1.000
<u>Conservatism</u>							
C-Scale	0.186*	0.41***	-0.341***	-0.594***	-0.448***	-0.373***	-0.568***
R-Factor	0.184*	0.375***	-0.310***	-0.556***	-0.422***	-0.359***	-0.531***
T-Factor	-0.186*	-0.189*	0.045	-0.023	0.372***	0.266**	0.204*

Note. <sup>1</sup> (1 = male; 2 = female)

\*  $P < 0.05$ ; \*\*  $P < 0.01$ ; \*\*\*  $P < 0.001$ .

Table 2 shows that males score higher than females in TAS, Dis, BS, and the SS total scale. As expected (see Zuckerman, 1979), there are no sex differences in ES. Surprisingly, females score higher in the C-Scale. This might be due to the fact that age and sex are confounded in the sample; there was an overrepresentation of older females and younger males. Age correlated positively with the C-Scale and negatively with all scales of the SSS. Conservatism (C-Scale and R-factor) and sensation seeking correlated negatively with each other. As expected, ES yielded the highest coefficients. Toughmindedness correlated positively with the disinhibition subscale of the SSS and negatively with age. Males score higher than females on the T-factor.

#### Interrelations among funniness and aversiveness of the humor factor scores

The factor scores describing funniness and aversiveness of incongruity-resolution, nonsense, and sexual humor were intercorrelated. The results are given in Table 3.

Table 3. Intercorrelations among the humor factors

	INC-RES <sub>f</sub>	NON <sub>f</sub>	SEX <sub>f</sub>	INC-RES <sub>a</sub>	NON <sub>a</sub>	SEX <sub>a</sub>
INC-RES <sub>a</sub>	-0.191*	0.159	0.275***	1.000		
NON <sub>a</sub>	0.047	-0.046	0.290***	0.385***	1.000	
SEX <sub>a</sub>	0.303***	0.088	-0.320***	-0.150	-0.056	1.000

Note. Corresponding funniness and aversiveness scores in italics.

\*  $P < 0.05$ ; \*\*  $P < 0.01$ ; \*\*\*  $P < 0.001$ .

Table 3 confirms the relative independence of the funniness and aversiveness component in humor appreciation. The diagonal was negative, but, as expected, only substantially so for sexual humor. There are also relationships between non-homologous scales. Funniness of INC-RES goes along with aversiveness of sexual humor. Funniness of sexual humor correlates positively with aversiveness of the two structure-dominated humor categories. Finally, aversiveness of the two structure-dominated categories are positively intercorrelated but are independent from the factor of sexual content.

#### Correlations between the humor appreciation and personality

Correlations between the humor appreciation (factor scores of funniness and aversiveness of incongruity-resolution, nonsense, and sexual humor) and the personality variables were computed next. The results are given in Table 4.

Table 4. Intercorrelation between humor appreciation and sex, age, sensation seeking, and conservatism

	INC-RES <sub>f</sub>	NON <sub>f</sub>	SEX <sub>f</sub>	INC-RES <sub>a</sub>	NON <sub>a</sub>	SEX <sub>a</sub>
Age	0.256**	-0.285***	-0.107	-0.094	-0.041	0.241**
Sex <sup>1</sup>	0.261**	0.061	-0.293***	-0.185*	-0.163*	0.112
<u>Sensation seeking</u>						
TAS	-0.221**	0.149	-0.067	-0.034	0.012	-0.076
ES	-0.343***	0.260**	-0.021	0.013	0.004	-0.079
Dis	-0.427***	0.142	0.281***	0.259***	0.138	-0.240**
BS	-0.302***	0.115	0.183*	0.184*	0.156	-0.095
TOTAL	-0.416***	0.218**	0.103	0.120	0.093	-0.159
<u>Conservatism</u>						
C-Scale	0.452***	-0.195*	0.082	-0.028	0.093	0.139
R-Factor	0.446***	-0.162*	0.087	-0.022	0.090	0.129
T-Factor	-0.078	-0.014	0.349***	0.211**	0.251**	-0.254**

Note. <sup>1</sup> (1 = male; 2 = female)

\*  $P < 0.05$ ; \*\*  $P < 0.01$ ; \*\*\*  $P < 0.001$ .

Funniness of humor. Table 4 shows that nonsense humor was found funnier by the younger and INC-RES humor was judged funnier by the older subjects. As expected, males judge sexual humor funnier than females do. However, contrary to expectations, males also do find the INC-RES humor less funny than females.

The expected pattern of relationship between sensation seeking and humor emerged; generally, INC-RES<sub>f</sub> correlated negatively and NON<sub>f</sub> correlated positively with SS. In detail, INC-RES<sub>f</sub> correlated negatively with the total scale and all SS subscales. No such correlation was expected for TAS, however, and Dis rather than ES yielded the highest coefficient. As expected, ES and the total scale (but not BS) correlated significantly negatively with NON<sub>f</sub>. Furthermore, Dis correlated positively with funniness of sexual humor. Thus, for incongruity-resolution-based sexual humor a paradoxical situation occurs for individuals high in Dis. While they do judge the sexual content of a joke funny, they do not like its structural basis. In other words, the liking of the content was suppressed by the dislike of the structure. This may yield non-significant coefficients when a sexual humor category is studied.

Conservatives judge INC-RES humor funnier and find nonsense humor less funny than liberals do. This can be found for both the C-Scale as well as the R-factor. Toughmindedness correlated positively with funniness of sexual humor.

Aversiveness. Only a few of the expected relationships emerged and they were all associated with the category of sexual humor. As expected, sexual humor was found aversive by subjects scoring low in disinhibition and in toughmindedness. There was no such effect for sex, and older subjects tended to find sexual humor more aversive than younger subjects. As regards the structure-dominated humor categories, there were positive rather than negative correlations between aversiveness and (male) sex, Dis and the T-Factor. Finally, there was no significant correlation between conservatism and aversiveness of nonsense humor.

### Structure preference

Structure preference indices (SPI<sub>f</sub>) were created by subtracting INC-RES<sub>f</sub> from NON<sub>f</sub> for the factor scores as well as for the 3 WD scales (Forms A and B combined). Higher scores indicate preference for NON over INC-RES. The correlations with the personality variables were computed and are presented in Table 5. As a comparison, the correlations for the two 3 WD-scales (INC-RES<sub>f</sub>, NON<sub>f</sub>) are given as well.

Table 5. Relationship between personality and structure preference

	SPI <sub>f</sub> - factors	INC-RES <sub>f</sub>	NON <sub>f</sub>	SPI <sub>f</sub> (A+B)	SPI <sub>a</sub> - factors	INC-RES <sub>a</sub>	NON <sub>a</sub>	SPI <sub>a</sub> (A+B)
Age	-0.380***	0.116	-0.210*	-0.387***	0.040	0.022	-0.021	0.069
Sex <sup>1</sup>	-0.141	0.149	0.090	-0.106	-0.001	-0.097	-0.170*	0.162*
<u>Sensation seeking</u>								
TAS	0.268***	-0.161	0.029	0.253***	0.042	-0.037	-0.005	-0.044
ES	0.403***	-0.217**	0.089	0.395***	-0.037	-0.016	0.023	-0.063
Dis	0.400***	-0.255**	0.037	0.389***	-0.084	0.172*	0.149	-0.016
BS	0.338***	-0.184*	0.036	0.291***	-0.007	0.155	0.189*	-0.111
Total	0.446***	-0.266**	0.060	0.430***	-0.012	0.076	0.103	-0.073
<u>Conservatism</u>								
C-Scale	-0.455***	0.346***	0.027	-0.444***	0.112	0.074	0.027	-0.058
R-Factor	-0.428***	0.354***	0.057	-0.423***	0.105	0.068	0.035	-0.036
T-Factor	0.045	-0.012	0.069	0.091	0.064	0.183*	0.164*	0.027

Note. <sup>1</sup> (1 = male; 2 = female). SPI = Structure Preference Index.

\*  $P < 0.05$ ; \*\*  $P < 0.01$ ; \*\*\*  $P < 0.001$ .

As regards funniness, the results are very clear for both types of indices: nonsense was preferred (relative to INC-RES) by younger individuals, liberals, and by sensation seeker. INC-RES was preferred by older, conservative, and low sensation seeking subjects. The coefficients are higher than obtained for the individual scales. The results for the indices derived from the factor scores and from the combined Forms A and B are comparable; they were also highly intercorrelated,  $r = 0.863$ . There was one unexpected finding, however: TAS was not expected to correlate with SPI.

### Appreciation of sexual content

In order to eliminate the structure variance from the SEX<sub>f</sub> and SEX<sub>a</sub> humor categories (Forms A and B combined) two indices were used. First, a regression analysis with nonsense and INC-RES as predictors and sexual humor as criterion was performed. The residuals (SEX<sub>f</sub>-resid, SEX<sub>a</sub>-resid) are considered to reflect appreciation of content in sexual humor since the appreciation of structure is partialled out. Second, a difference score (SEX<sub>f</sub>-diff, SEX<sub>a</sub>-diff) was computed by subtracting INC-RES<sub>f</sub> (and INC-RES<sub>a</sub>) from SEX<sub>f</sub> (and SEX<sub>a</sub>, respectively). NON was neglected since most of the SEX items are based on INC-RES. These two indices are compared to the correlations obtained for the factor of sexual humor.

In order to compare the effect of the different methods to eliminate of the structure variance these two indices and the sexual humor categories (which include the structure variance) were correlated with the personality variables. The results are given in Table 6.

Table 6. Relationship between personality and appreciation of sexual content

	SEX <sub>f</sub>	SEX <sub>f</sub> -resid	SEX <sub>f</sub> -diff	SEX <sub>f</sub> -factor	SEX <sub>a</sub>	SEX <sub>a</sub> -resid	SEX <sub>a</sub> -diff	SEX <sub>a</sub> -factor
Age	-0.061	-0.084	-0.231**	-0.107	0.197*	0.250**	0.223**	0.241**
Sex <sup>1</sup>	-0.085	-0.282***	-0.306***	-0.293***	-0.004	0.102	0.087	0.112
<u>Sensation seeking</u>								
TAS	-0.088	-0.024	0.087	-0.067	-0.076	-0.078	-0.060	-0.076
ES	-0.079	0.006	0.172*	-0.021	-0.079	-0.102	-0.083	-0.079
Dis	0.110	0.342***	0.476***	0.281***	-0.104	-0.272***	-0.292***	-0.240**
BS	0.058	0.210**	0.314***	0.183*	-0.019	-0.167*	-0.170*	-0.095
Total	-0.012	0.157	0.325***	0.103	-0.095	-0.196*	-0.190*	-0.159
<u>Conservatism</u>								
C-Scale	0.194*	0.017	-0.181*	0.082	0.166*	0.166*	0.135	0.139
R-Factor	0.201*	0.007	-0.182*	0.087	0.156	0.154	0.129	0.129
T-Factor	0.269***	0.381***	0.379***	0.349***	-0.089	-0.263**	-0.284***	-0.254**

Note. <sup>1</sup> (1 = male; 2 = female). f = funniness, a = aversiveness, A, B = Forms of the 3 WD.

\*  $P < 0.05$ ; \*\*  $P < 0.01$ ; \*\*\*  $P < 0.001$ .

Table 5 shows that each of the three indices of appreciation of sexual content yielded higher coefficients than the sexual humor category score. In detail, while SEX<sub>f</sub> did not correlate significantly with Dis and gender, all three indices did. Toughmindedness did correlate with SEX<sub>f</sub>, however, the coefficients obtained for the three indices were higher. Similarly, aversiveness of sexual content in humor correlated negatively with Dis and toughmindedness only after the structure variance was removed; there was no such correlation for SEX<sub>a</sub>. On the other hand, the significant correlation between conservatism (C-Scale, R-factor) and SEX<sub>f</sub> diminishes as a result of extraction of the structure variance confirming that this correlation before was based only on the structure (rather than the content).

The results for the residuals are somewhat lower than for the difference score. This might be due to the fact that appreciation of the nonsense structure correlated positively with interest in sex (Ruch & Hehl, 1988). Computing the residuals also eliminated this variance. The factor scores correlated highly with both the residuals ( $r = 0.906$ ) and the index based on

difference scores ( $r = 0.768$ ); they were highly intercorrelated themselves ( $r = 0.902$ , all  $< 0.0001$ ).

### Humor appreciation and social attitudes

In order to study the attitudes held by individuals appreciating a particular type of humor the 50 items of the C-Scale were correlated with the humor appreciation (*i.e.*, the 6 factor scores).

Funniness of incongruity-resolution humor. Funniness of incongruity-resolution humor correlated significantly with 26 of the 50 attitude items. Individuals scoring high in INC-RES<sub>f</sub> disagree with the following items: mixed marriage (-0.316), euthanasia (-0.30), smoking pot (-0.30), legal abortion (-0.296), easy divorce (-0.279), student pranks (-0.274), striptease (-0.231), evolution theory (-0.195), pornography (-0.176), and rock music (-0.17). They do agree with the statements: school uniforms (0.173), inborn conscience (0.18), corporal punishment (0.183), strict rules (0.185), miracles (0.185), self-denial (0.194), moral training (0.202), virginity (0.217), military drill (0.224), licensing laws (0.229), chastity (0.236), patriotism (0.242), bible truth (0.261), Devine law (0.263), sabbath observance (0.324), and church authority (0.329). Thus, while positively and negatively keyed items correlated with opposite signs, it is predominantly the attitudes relating to religion which yielded the highest coefficients in Italy.

Funniness of nonsense humor. Individuals appreciating this type of humor disagree with the statements: strict rules (-0.234), fluoridation (-0.225), inborn conscience (-0.191), death penalty (-0.174), and agree with the items: casual living (0.173), and cousin marriage (0.234). High and low scorers in NON<sub>f</sub> seem to differ with regard to how strongly they emphasize personal rights and personal freedom.

Funniness of sexual humor. Subjects scoring high in SEX<sub>f</sub> disagree with the statements socialism (*riformismo*) (-0.204), women judges (-0.157), and agree with the items: straitjackets (0.168), student pranks (0.21), corporal punishment (0.217), striptease (0.244), racial segregation (0.271), and pornography (0.325). Thus, not only the attitudes relating to sex yielded significant correlations supporting the toughmindedness hypothesis.

Aversiveness of incongruity-resolution humor. Individuals scoring high in INC-RES<sub>a</sub> disagree with the following items: socialism (*riformismo*) (-0.25), strict rules (-0.198), women judges (-0.186), inborn conscience (-0.167), and favor the attitudes: white superiority (0.164), racial segregation (0.207), and student pranks (0.211).

Aversiveness of nonsense humor. Individuals scoring high in NON<sub>a</sub> disagree with the following items: women judges (-0.248), mixed marriage (-0.236), socialism (*riformismo*) (-0.228), working mothers (-0.186), and agree with the items royalty (0.167) and empire-building (*colonialism*) (0.225).

Aversiveness of sexual humor. Aversiveness of sexual humor correlated with 9 attitude items. Individuals scoring high in SEX<sub>a</sub> disagree with the following items: striptease (-0.241), student pranks (-0.224), pornography (-0.188), racial segregation (-0.174), easy divorce (-0.165), and death penalty (-0.164), and agree with the items chastity (0.171), virginity (0.187), and licensing laws (0.189). Again, the predictors are not restricted to attitudes to sex.

Thus, the relationship between conservatism and INC-RES<sub>f</sub> could be also be found at the level of individual social attitudes. Furthermore, there was also a higher order relationship: The higher an item of the C-Scale loaded on the conservatism factor, the higher it correlated with the INC-RES factor. Similarly, there was a higher order relationship for toughmindedness and SEX<sub>f</sub>. The higher an item's loading on the toughmindedness factor, the

higher its correlation with funniness of sexual humor. These relationships are presented in Figures 1 and 2.

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insert Figures 1 & 2 about here

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Phi coefficients were computed to determine the strength of the similarity of the profiles and they turned out to be very high, 0.909 and 0.777 for the conservatism/INC-RES<sub>f</sub> and toughmindedness/SEX<sub>f</sub> relationships, respectively. As a comparison, the coefficients for the conservatism/SEX<sub>f</sub> and toughmindedness/INC-RES<sub>f</sub> comparisons were 0.276 and -0.113, respectively.

## DISCUSSION

The present study confirms a further aspect of cross-national stability of the 3 WD-humor taxonomy: the prediction regarding personality correlates of humor appreciation in Italy generally received support. Again, incongruity-resolution humor is appreciated by conservative individuals low in experience seeking and of a higher age. The individuals tendency to avoid new and complex stimulation and seek out stimuli which are simpler, more familiar, and congruent apparently extends to finding the type of humor structure funny that allows a complete resolution of incongruities. Nonsense humor is found funny by the younger, the liberals, and by the sensation seeker. In particular, by individuals high in experience seeking. Their need for novel and complex sensations and experiences can be interpreted to extend to appreciation of the humor structure in which unresolved incongruities contribute to funniness. While conservatism and experience seeking are correlated with both structure-dominated humor categories (albeit with a different sign), it was also evident that conservatism is more closely aligned with incongruity-resolution humor than ES is. Indeed, in prior studies ES was even more highly associated with nonsense humor than with INC-RES (Ruch, 1988). Finally, the sexual content in humor is found funny by individuals (mostly males) that are high in disinhibition, boredom susceptibility, and toughmindedness. Their positive attitude to sex extends to appreciation of sexual themes in the context of humor. Maybe the enjoyment of the stimulation by highly tendentious humor is an expression of the high disinhibitors general tolerance for high intensive stimulation (Little & Zuckerman, 1986; Zuckerman, 1984).

Sex and age also yielded the expected correlational patterns in Italy. Funniness of incongruity-resolution humor increased and funniness of nonsense declined with age. This replicates the results of Ruch *et al.* (1990) and Ruch and Hehl (1985).

Thus, the basic correlates of appreciation of humor were replicated in Italy. Besides Germany and Italy, conservatism was also a potent predictor of appreciation of humor in Austria (Ruch & Rath, in press; Ruch, 1981), France (Ruch *et al.*, 1991), and Turkey (Ciftci, 1990). The size of the correlations obtained here is comparable to the ones found for the German and Austrian samples. This is noteworthy since--with the exception of the SSS--no standard instruments validated in Italy could be used for the personality variables; the 3 WD and the C-Scale were applied in Italy for the first time. The findings appear also to be independent of the type of the instrument used for the assessment of sensation seeking and conservatism.

The computation of preference indices supported the view that sensation seeking is a potent predictor of the tendency to prefer nonsense structure over INC-RES; sensation seeker consider humor based on the nonsense structure funnier than incongruity-resolution humor,

independent of the absolute degree of appreciation for these two types of humor. Indeed, for the SPI derived from the regular 3 WD scales the coefficient increased as compared the coefficients computed for the INC-RES and NON scales separately. No such increase, however, was observed for the SPI derived from the factor scores. This might be due to the fact that the regular 3 WD scales contain additional sources of variance (e.g. state variance due to mood or testing conditions) thereby suppressing the coefficients with external variables. This variance is added to the responses to jokes and cartoons of both categories and makes them intercorrelate positively. The computation of difference scores does eliminate this variance. Since this variance is not included in the first three factors the coefficients do not increase that much as in the case for the regular 3 WD scores.

The comparison of the two indices of appreciation of sexual content with both the factor of sexual humor and the SEX<sub>f</sub> humor category confirmed the assumptions that a) sexual humor is composed of both content and structure, and b) correlations with external variables can be based on either sources of variance. While the factor analysis yields a factor of sexual content which is orthogonal to the two structure-dominated humor factors, the SEX<sub>f</sub> humor category additionally contains variance relating to appreciation of humor structure. Removing this variance (by computing residuals or difference scores) creates an index of appreciation of sexual content which is comparable to the factor of sexual humor. This has to be considered then testing hypotheses relating exclusively to appreciation of the content of sexual humor. Similarly, the structural basis has to be considered when the hypotheses relate to sexual humor globally. For example, it can be expected that the authoritarian personality (Adorno, Frenkel-Brunswik, Levinson & Sanford, 1950), or any other type of toughminded conservatives (see Eysenck, 1954) will appreciate incongruity-resolution based sexual humor but not nonsense-based sexual humor. Similarly, individuals high in sexual permissiveness, disinhibition or other type of toughminded radicals appreciate sexual humor based on the nonsense structure (Ruch and Hehl, 1986) but not incongruity-resolution based sexual humor. Finally, it has to be considered that variables correlate with appreciation of sexual humor because of the structural basis. For example, in the present study conservatism correlated with SEX<sub>f</sub> (because of the INC-RES structure) but not with the three indices reflecting appreciation of only the sexual content.

The confirmation of structural variance in appreciation of sexual humor also has consequences for factor analytic studies of humor taxonomy. It does not seem reasonable to expect a simple structure for sexual humor or other content-related forms of humor. Rather, a second loading on the structure-related factors has to be taken into account. This suggests the application of models which allow to specify more than one loading for a variable.

With a few exceptions the hypotheses regarding aversiveness of humor were not replicated. This might be due to several reasons. Firstly, the three humor categories yielded very low means and a restricted variance in the present Italian sample (Ruch & Forabosco, 1993); this would lower the correlations. Maybe the more extreme wording of the rating scale ("disturbo" = disturbed, annoyed) produced a higher threshold for responding negatively. As an alternative, the Italian sample maybe was more liberal with respect to humor. In any case, the restricted variance might have lowered the correlations. Secondly, there was a confounding of sex and age in the present sample; males tended to be younger and females tended to be older. There might be opposite tendencies suppressing each other. For example, usually aversiveness of the structure-dominated humor categories decreases with age (Ruch *et al.*, 1990). Thus, while females generally would give higher aversiveness to sexual humor than males, in the present sample, however, they do not so because of their higher average age. Similarly, the higher mean age of females, for example, might account for the effects found for funniness of INC-RES humor.



The present study also allowed the exploration of the pattern of social attitudes associated with appreciation of humor. The results suggested specific patterns of attitudes for the different types of humor. For example, while nonsense is not strongly associated with the general dimensions of social attitudes, the individual attitudes emphasizing the rights of the individual are. While the basic direction of the results for INC-RES humor are already delineated by the correlations with the R-factor, this analysis gave a more vivid impression of the type of attitudes that can be inferred from the knowledge of one's preference for this type of humor. While the attitudes relating to church were the best predictors of funniness of INC-RES humor, they were also the best markers of conservatism in Italy (Forabosco & Ruch, 1993).

It can be concluded that in general humor appreciation in Italy is embedded into a similar personality background than in the other European countries studied.

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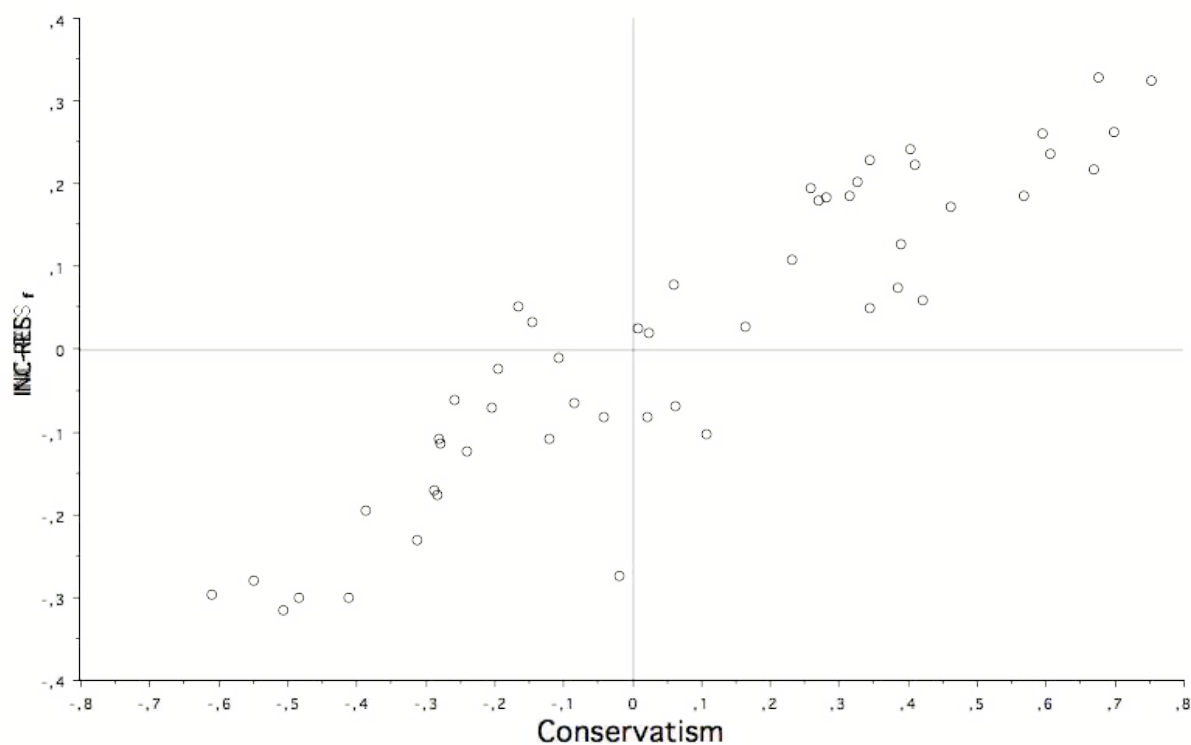


Fig. 1. Factor loadings of the C-Scale items on the conservatism factor (abscissa) and their correlations with INC-RES<sub>f</sub> (ordinate).

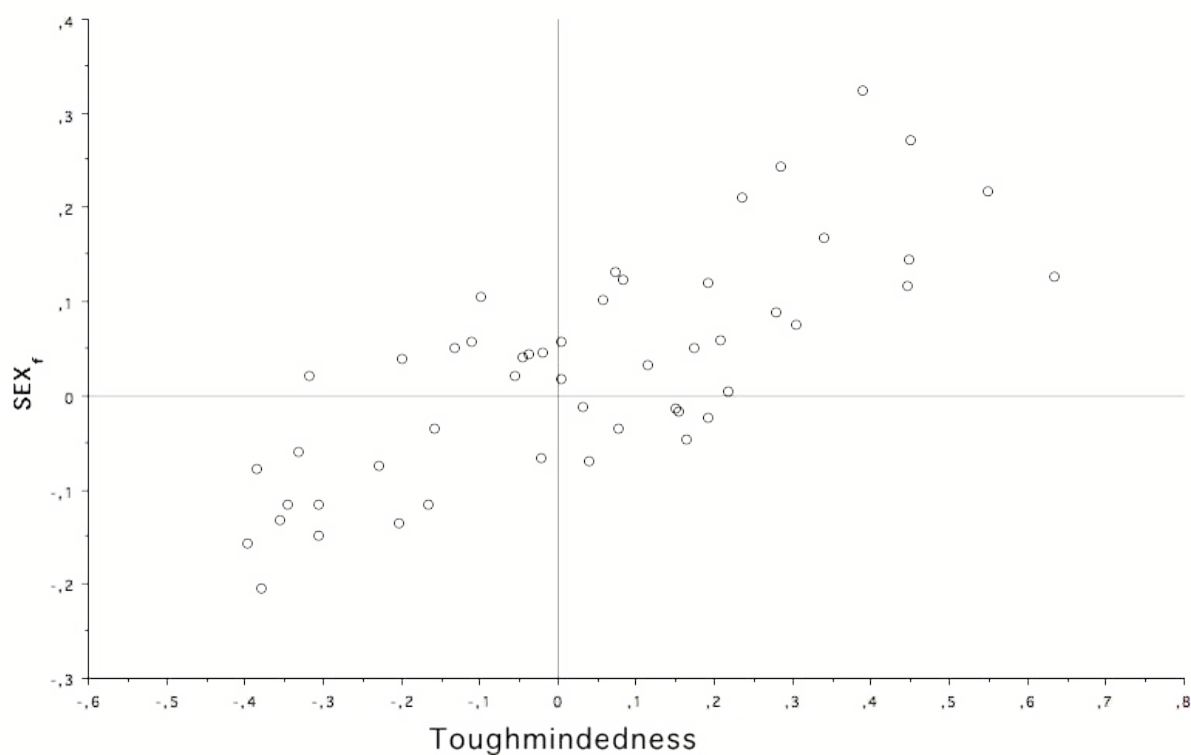


Fig. 2. Factor loadings of the C-Scale items on the toughmindedness factor (abscissa) and their correlations with SEX<sub>f</sub> (ordinate).